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EXAMINER

LI, ZHUO H

ART UNIT

PAPER NUMBER

2186

DATE MAILED: 05/07/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/878,138	MOORE ET AL.	
	Examiner	Art Unit	
	Zhuo H Li	2186	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 08 June 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-106 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 31-46 is/are allowed.
- 6) ☒ Claim(s) 1-4, 7, 10-19, 22, 25-30, 47-106 is/are rejected.
- 7) ☒ Claim(s) 5-6, 8-9, 20-21 and 23-24 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date <u>5 and 8-12</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Information Disclosure Statement

1. The Information Disclosure Statement filed on October 3, 2001 (Paper No. 5), January 28, 2002 (Paper No. 8), October 7, 2002 (Paper No. 9), March 04, 2003 (Paper No. 6), August 11, 2003 (Paper No. 11) and April 12, 2004 (Paper No. 12) have been considered.

Double Patenting

2. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

3. Claim 92 is provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claim 21 of copending Application No. 09/877,691 filed on 06/08/2001. Although the conflicting claims are not identical, they are not patentably distinct from each other because all the claimed features of present Application 09/878, 138 are transparently found in copending Application 09/877,691. Take an example of independent claim 92 between the present Application 09/878,138 and the independent claim 21 of the copending Application 09/877, 691 as following table:

Application 09/878,138	Co-pending Application 09/877,691
A method for re-directing data traffic in a write-once memory device, the method comprising:	A method for re-directing data traffic in a write-once memory device, the method comprising:
(a). in a write-once memory device, storing a file system structure that would otherwise overwrite a file system structure previously-written in a memory location identified by a first address in a memory location identified by a second address; and	(a). in a write-once memory device, storing data that would otherwise overwrite data previously-written in a memory location identified by a first address in a memory location identified by a second address; and
(b). in response to a command to read the memory location identified by the first address:	(b). in response to a command to read the memory location identified by the first address:
(b1). determining that the memory location identified by the second address should be read	(b1). determining that the memory location identified by the second address should be read

Art Unit: 2186

instead of the memory location identified by the first address; and	instead of the memory location identified by the first address; and
(b2). reading the file system structure stored in the memory location identified by the second address.	(b2). reading the data stored in the memory location identified by the second address.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

Claim Rejections - 35 USC § 112

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. Claims 74-80 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 74 recites the limitation "a memory device" and a write-many file system in lines

- 3-4. There is insufficient antecedent basis for this limitation in the claim.

Claims 75-80 are also rejected because of depending claim 74, containing the same deficiency.

Claim Rejections - 35 USC § 102

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

7. Claims 66, 69-74 and 76-80 are rejected under 35 U.S.C. 102(b) as being anticipated by Hansen et al. (US PAT. 5,832,263 hereinafter Hansen).

Regarding claim 66, Hansen discloses a method for storing data and file system structures of a write-many file system, i.e., tracking store, in a memory device, i.e., CD-ROM, the method comprising storing data in a write-once memory array, i.e., non modifiable store, of a memory device, and storing a file system structures of a write-many file system in a write-many memory array of the memory device (col. 6 line 42 through col. 7 line 22 and col. 7 line 33 through col. 8 line 4).

Regarding claim 69, Hansen discloses a method for storing data and file system structures of a write-many file system further comprising storing a file system structure, tracking store, of a write-once file system, non modifiable store, in the write-once memory array, i.e., CD-ROM, (col. 7 line1 through col. 8 line 4).

Regarding claim 70, Hansen discloses a method for storing data and file system structures of a write-many file system further comprising storing additional data, i.e., modified data/new file data, in the write-once memory array (col.4 lines 29-42 and col. 5 line 65 through col. 6 line 12), re-writing the file system structure stored in the write-many memory array (col. 7 line1 through col. 8 line 4).

Art Unit: 2186

Regarding claims 71-73, Hansen disclose a method for storing data and file system structures of a write-many file system wherein at least one of steps a and b is performed by a controller, i.e., In-Place Modifier module (42, figure 3) in the memory device, i.e., CD-ROM, a hardware in a data storage device, and software in a data storage device (col. 4 lines 43-65, col. 5 lines 51-64 and col. 6 lines 42-51).

Regarding claim 74, Hansen discloses a method for reading data in a memory device, i.e., CD-ROM, using a write-many file system, i.e., tracking store, the method comprising providing a memory device, i.e., CD-ROM and a reading device, i.e., user/agent (48, figure 3), wherein the reading device uses a write-many file system, i.e., tracking store, and wherein the memory device comprising a write-once memory array, i.e., non-modifiable store, storing data and a write-many memory array storing a file system structure of a write-many file system (col. 4 lines 17-42 and col. 6 line 42 through col. 7 line 22), reading the file system structure of the write-many file system stored in the write-many memory array, and reading the data stored in the write-once memory array (col. 3 line 52 through col. 4 line 16, col. 6 lines 13-30 and col. 7 lines 34-60).

Regarding claim 76, the limitation of the claim are rejected as the same reasons set forth in claim 68.

Regarding claim 77, Hansen discloses a method for reading data in a memory device further comprising reading a file system structure of a write-once file system from the write-once memory array (col. 6 lines 13-30 and col. 7 lines 1-60).

Regarding claims 78-80, the limitation of the claims are rejected as the same reasons set forth in claims 71-73.

Claim Rejections - 35 USC § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. Claims 1, 7, 10-15, 22, 25-30, 64, 68, 81-86 and 90-96 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hansen et al. (US PAT. 5,832,263 hereinafter Hansen).

Regarding claim 1, Hansen discloses a method for storing data in a write-once memory device, the method comprising storing data in a write-once memory device during a second session (col. 4 lines 28-42), i.e., recorded the new information which supplement the information recorded in the non-modifiable store, storing a second set of file system structures for the write-many file system, i.e., tracking store, in the write-once memory device, the second set of file system structures being associated with the data stored in the write-once memory device during both the first and second sessions (col. 4 line 66 through col. 5 line 21 and col. 5 line 65 through col. 6 line 12), storing a pointer to a memory address storing a file system structure of second set of file system structures in the write-once memory device (col. 7 line 34 through col. 8 line 4), although Hansen does not clearly teaches the way to store data in the write-once memory device during a first session, and the way to store a first set of file system structures for a write-many file system in the write-once memory device, the first set of file system structures being associated with the data stored in the write-once memory device during the first session. Hansen

Art Unit: 2186

teaches when a read requested was generated by agent/requestor, it searches the tracking store to determine if any portion of requested should be retrieved, and fetches entries from tracking store which intersect with the storage area of the requested information, and partitions the requested into pieces which can be satisfied from the tracking store and pieces which are to be retrieved from the non-modifiable store (col. 3 line 65 through col. 4 line 16 and col. 6 lines 13-30), in addition, Hansen teaches the modified information is in modifying the exciting information stored in the non-modifiable store area which indicated by the tracking store, (col. 4 lines 30-42, col. 6 lines 52-67 and col. 7 line 45 through col. 8 line 4). Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to recognize the storing method of Hansen in having the steps of storing data in the write-once memory device during a first session, and storing a first set of file system structures for a write-many file system in the write-once memory device, the first set of file system structures being associated with the data stored in the write-once memory device during the first session.

Regarding claim 7, Hansen discloses the method further comprising storing an additional pointer to a memory address storing an additional file system structure of the second set of file system structure (col. 7 line 1 through col. 8 line 4), i.e., tracking store further comprising a location information (84, figure 50), wherein the location information further including a pointer for the location within the file, and the pointer is stored when the file is opened and updated as needed to allow reads and writes to retrieve and modify data, and each data structure includes a corresponding location pointer (106, figure 6).

Regarding claim 10, Hansen discloses the method further comprising storing first and second sets of file system structures for a write-once file system, i.e., tracking store, in the write-

Art Unit: 2186

once memory device, the first set being associated with the data stored in the write-once memory device during the first session, and the second set being associated with the data stored in the write-once memory device during both the first and second sessions (col. 7 lines 1-44).

Regarding claim 11, Hansen discloses the method further comprising removing the write-once memory device from a data storage device between the first and second sessions (col. 5 lines 31-50).

Regarding claims 12-14, Hansen discloses the method comprising the steps d or e in claim 1 are performed by a controller, i.e., In-Place Modifier module (42, figure 3), hardware and software in a data storage device, i.e., CD-ROM, (col. 4 lines 43-65, col. 5 lines 51-64 and col. 6 lines 42-51).

Regarding claim 15, Hansen discloses a method for reading data in a write-once many memory device using a write-many file system, i.e., tracking store, the method comprising providing a write-once memory device and a reading device, i.e., user/agent, wherein the reading device uses a write-many file system (col. 3 line 62 through col. 4 line 16 and col. 6 lines 13-30), and wherein the write-once memory device comprises data stored during first and second sessions, a first set of file system structures for the write-many file system, the first set of file system structures being associated with the data stored during the first session, a second set of file system structures for the write-many file system, the second set of file system structures being associated with the data stored during the first and second sessions (col. 7 line 45 through col. 8 line 4), a pointer to memory address storing a file system structure of the second set of file system structures (col. 7 lines 34-60), sending a command from the reading device to read a memory address of the write-once memory device, wherein the write-many file system expects

Art Unit: 2186

the memory address to contain a file system structure, i.e., root directory (col. 6 lines 52-67), associated with the data stored during both first and second sessions and wherein the memory address differs from the memory address indicated by the pointer (col. 7 line 1 through col. 8 line 4), i.e., tracking store further comprising a location information (84, figure 50), wherein the location information further including a pointer for the location within the file, and the pointer is stored when the file is opened and updated as needed to allow reads and writes to retrieve and modify data, and each data structure includes a corresponding location pointer (106, figure 6), and returning the file system structure stored in the memory address indicated by the pointer instead of data stored in the memory address request by the reading device (col. 3 line 62 through col. 4 line 16). Although Hansen does not clearly teach the way to store data in the write-once memory device during a first session, and the way to store a first set of file system structures for a write-many file system in the write-once memory device, the first set of file system structures being associated with the data stored in the write-once memory device during the first session. Hansen teaches when a read requested was generated by agent/requestor, it searches the tracking store to determine if any portion of requested should be retrieved, and fetches entries from tracking store which intersect with the storage area of the requested information, and partitions the requested into pieces which can be satisfied from the tracking store and pieces which are to be retrieved from the non-modifiable store (col. 3 line 65 through col. 4 line 16 and col. 6 lines 13-30), in addition, Hansen teaches the modified information is in modifying the existing information stored in the non-modifiable store area which indicated by the tracking store, (col. 4 lines 30-42, col. 6 lines 52-67 and col. 7 line 45 through col. 8 line 4). Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to

Art Unit: 2186

recognize the storing method of Hansen in having the steps of storing data in the write-once memory device during a first session, and storing a first set of file system structures for a write-many file system in the write-once memory device, the first set of file system structures being associated with the data stored in the write-once memory device during the first session.

Regarding claim 22, the limitation of the claim are rejected as the same reasons set forth in claim 7.

Regarding claim 25, the limitation of the claim are rejected as the same reasons set forth in claim 10.

Regarding claim 26, Hansen discloses the method for reading data in a write-once memory device wherein the memory device comprises a controller, i.e., in-place modifier (42, figure 3) and a register, a table or map, (col. 5 lines 5-21), wherein the pointer is stored in a memory array of the memory device, and further comprises with the controller reading the pointer stored in the memory array based upon the requested from agent (48, figure 3), storing the pointer in the register, and reading the memory location indicated by the pointer stored in the register instead of the memory address requested by the reading device (col. 7 line 1 through col. 8 line 4).

Regarding claim 27, Hansen discloses the method for reading data in a write-once memory device wherein the pointer is read using a temporal-to-spatial mapping technique (col. 6 line 42 through col. 7 line 43).

Regarding claims 28-30, the limitation of the claims are rejected as the same reasons set forth in claims 12-14.

Regarding claim 64, the limitation of the claim are rejected as the same reasons set forth in claim 1.

Regarding claim 68, Hansen disclose a method for storing data and file system structures of a write-many file system wherein the file system structure is selected from the group consisting of a master boot record, a partition boot record, a file allocation table, and a root directory (col. 6 lines 42-67).

Regarding claims 81-82, Hansen discloses a method of reading and writing data in a write-once read many memory wherein the pointer is stored in a table, i.e., tracking store, and the pointer is stored in a field associated with a sector data (col. 6 lines 47-60 and figure 6).

Regarding claims 83-84, although Hanson does not clearly discloses the memory array comprising a three-dimensional and/or two -dimensional memory array, Hanson teaches the write-once memory disk, i.e., optical disk comprising a non-modifiable store which comprising a plurality of entries wherein each entry including base file information (104, figure 6), a location pointer (106, figure 6), and a list of modification entries (col. 7 lines 47-60), in addition, the write-once memory disk of Hanson further comprising a directory, i.e., tracking store, which storing the file structure of each entry stored in the non-modifiable store (col. 4 line 66 through col. 5 line 21 and col. 7 line 1-22). Thus, one skill in the art recognizes the write-once memory disk of Hanson is a three-dimensional and/or two -dimensional memory arrays.

Regarding claim 85-86, Hansen discloses a method of reading and writing data in a write-once read many memory wherein the write-once memory comprising a solid-state memory device, i.e., writable area (col. 5 lines 12-21 and col. 6 lines 52-67), and an optical memory device (col. 3 lines 46-60).

Regarding claim 90-91, although Hanson does not clearly disclose the write-many memory array comprise an electrically-erasable programmable read-only memory and flash memory, Hanson teaches the tracking store, i.e., write-many memory array, is able to either archived or deleted once the new non modifiable store is installed (col. 5 lines 12-21). Thus, one skilled in the art recognizes the write-once memory disk of Hanson is an electrically erasable programmable read-only memory and flash memory.

Regarding claim 92, the limitation of the claim are rejected as the same reasons set forth in claim 15.

Regarding claims 93-96, the limitation of the claims are rejected as the same reasons set forth in claims 12-14.

10. Claims 2, 16-17, 47-54, 57-63, 65, 67, 75, 87-89, and 97-106 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hansen et al. (US PAT. 5,832,263 hereinafter Hansen) in view of Mahajan (US PAT. 5,437,012).

Regarding claim 2, Hansen differs from the claimed invention in not specifically teaches the method wherein the write-many file system comprises a DOS FAT file system. However Mahajan teaches in the write once/read many memory (1, figure 1) includes card directory (30, figure 3) and card data area (31, figure 3) wherein card data area stores user data and the card directory stores file structure information which corresponding to data stored in the card data area, in addition, the card directory further comprising updatable directory field with next sector information for allocating an available sector for the data, and start-of-file-table for each file start (col. 4 line 54 through col. 5 line 8 and col. 5 line 30 through col. 6 line 43). Therefore, it

Art Unit: 2186

would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify the write-many file system in the write-once read many device comprises a DOS FAT file system, as per teaching of the WORM card in Mahajan, because it increases the accessing speed of the memory by to quickly identify the start of the extent, the size of the extent, and the location of the next extent for the file.

Regarding claim 16, the limitation of the claim are rejected as the same reasons set forth in claim 2.

Regarding claim 17, Hansen differs from the claimed invention in not specifically teaches the method for reading data in a write-once memory device comprises sending a command from the reading device to read memory address zero. However, Mahajan teaches such (col. 6 lines 7-65). Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to the write-once memory device of Hansen in having a step of sending a command from the reading device to read memory address zero, as per teaching of the WORM card in Mahajan, because it increases the accessing speed of the memory by to quickly identify the start of the extent, the size of the extent, and the location of the next extent for the file.

Regarding claim 47, Hansen discloses a method for storing data in a write-once memory device, the method comprising storing data in a write-once memory device during a second session (col. 4 lines 28-42), i.e., recorded the new information which supplement the information recorded in the non-modifiable store, storing a root directory (figure 4 and col. 6 lines 52-67) for the write-many file system, i.e., tracking store, in the write-once memory device, the second set of file system structures being associated with the data stored in the write-once memory device during both the first and second sessions (col. 4 line 66 through col. 5 line 21 and col. 5 line 65

Art Unit: 2186

through col. 6 line 12), storing a pointer to a memory address storing a file system structure of second set of file system structures in the write-once memory device (col. 7 line 34 through col. 8 line 4), connecting the write-once memory device to a reading device, i.e., user/agent, sending a command from the reading device to read the memory address that the reading device expects to find the root directory (col. 7 line 1 through col. 8 line 4), i.e., tracking store further comprising a location information (84, figure 50), wherein the location information further including a pointer for the location within the file, and the pointer is stored when the file is opened and updated as needed to allow reads and writes to retrieve and modify data, and each data structure includes a corresponding location pointer (106, figure 6), returning the root directory stored in the memory addresses indicated by the pointers instead of data stored in the memory addresses requested by the reading device (col. 3 line 62 through col. 4 line 16), although Hansen does not clearly teaches the way to store data in the write-once memory device during a first session, and the way to store a first set of file system structures for a write-many file system in the write-once memory device, the first set of file system structures being associated with the data stored in the write-once memory device during the first session. Hansen teaches when a read requested was generated by agent/requestor, it searches the tracking store to determine if any portion of requested should be retrieved, and fetches entries from tracking store which intersect with the storage area of the requested information, and partitions the requested into pieces which can be satisfied from the tracking store and pieces which are to be retrieved from the non-modifiable store (col. 3 line 65 through col. 4 line 16 and col. 6 lines 13-30), in addition, Hansen teaches the modified information is in modifying the existing information stored in the non-modifiable store area which indicated by the tracking store, (col. 4 lines 30-42, col. 6 lines 52-67 and col. 7 line

Art Unit: 2186

45 through col. 8 line 4). Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to recognize the storing method of Hansen in having the steps of storing data in the write-once memory device during a first session, and storing a first set of file system structures for a write-many file system in the write-once memory device, the first set of file system structures being associated with the data stored in the write-once memory device during the first session. Hansen differs from the claimed invention in not specifically teaching first set of file system structures is a DOS FAT file system and the reading device to read the memory addresses is expected to find the file allocation table and returning the file allocation table stored in the memory addresses indicated by the pointers instead of data stored in the memory address requested by the reading device. However, Mahajan teaches in the write once/read many memory (1, figure 1) includes card directory (30, figure 3) and card data area (31, figure 3) wherein card data area stores user data and the card directory stores file structure information which corresponding to data stored in the card data area, in addition, the card directory further comprising updatable directory field with next sector information for allocating an available sector for the data, and start-of-file-table for each file start (col. 4 line 54 through col. 5 line 8 and col. 5 line 30 through col. 6 line 43). Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify the first set of file system structures is comprising a DOS FAT file system and the reading device to read the memory addresses is expected to find the file allocation table and returning the file allocation table stored in the memory addresses indicated by the pointers instead of data stored in the memory address requested by the reading device, as per teaching of the WORM card in

Art Unit: 2186

Mahajan, because it increases the accessing speed of the memory by to quickly identify the start of the extent, the size of the extent, and the location of the next extent for the file.

Regarding claims 48-50, Hansen discloses the method step of E in claim 47 is performed by a controller, i.e., In-Place Modifier module (42, figure 3), in the write once memory device, and is performed by hardware and software in a data storage device storing the second set of file system structures in the write-once memory device (col. 5 line 31 through col. 6 line 12).

Regarding claims 51-53, the limitation of the claims are rejected as the same reasons set forth in claims 12-14.

Regarding claim 54, the limitation of the claim are rejected as the same reasons set forth in claim 47.

Regarding claim 57, Mahajan discloses the method for reading data in the write-once memory device wherein the at least one of the second set of file system structures comprises an up-to-date file allocation table and root directory and wherein at least one of the first set of file system structures comprises an out-of data file allocation table and root directory (col. 6 line 7 through col. 7 line 51).

Regarding claims 58-60, the limitation of the claims are rejected as the same reasons set forth in claims 48-50.

Regarding claims 61-63, the limitation of the claims are rejected as the same reasons set forth in claims 12-14.

Regarding claim 65, Hansen differs from the claimed invention in not specifically teaches the method for reading data in the write-once memory device further comprising locating the second set of file system structures by locating an adjacent set of available memory cells of a

fixed offset. However Mahajan teaches such (col. 6 line 7 through col. 7 line 40). Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify the write-once memory device further comprising locating the second set of file system structures by locating an adjacent set of available memory cells of a fixed offset, as per teaching by the WORM card in Mahajan, because it increases the accessing speed of the memory by to quickly identify the start of the extent, the size of the extent, and the location of the next extent for the file.

Regarding claim 67, the limitation of the claim are rejected as the same reasons set forth in claim 2.

Regarding claim 75, the limitation of the claim are rejected as the same reasons set forth in claim 2.

Regarding claims 87-88, Mahajan discloses a data storage device, i.e., optical memory card (1, figure 3) stores the data in the write-once memory device, and wherein the data storage device comprises a device selected from a general-purpose computer, i.e., optical drive (col. 3 lines 9-68), and a data reading device, i.e., PC, comprises a device selected from a general-purpose computer (col. 3 lines 9-68). The difference between Mahajan and the claims is the claims specifically recite the data storage device comprises a device and the data reading device are both selected from the group consisting of a digital audio player, a digital audio book, an electronic book, a digital camera, a game player, a persona digital assistant, a portable telephone, a printer and a projector. However, having various of data reading devices do not have a disclosed purpose nor are this data reading devices to overcome any deficiencies in the prior art. As such, data reading device would be have been any of devices that capable to general a

Art Unit: 2186

memory access operation. In addition, since Mahajan discloses a central processing unit is able to general memory access operation, such as reading the stored data and updating a stored data in the write-once memory device of the storage device via the device drive as mention above.

Accordingly, it would have been an obvious matter of design choice to utilize the system of Mahajan wherein the data reading device is a CPU, as disclosed supra, since applicants have not discloses that a device selected from the group consisting of a digital audio player, a digital audio book, an electronic book, a digital camera, a game player, a personal telephone, a printer and a projector, as opposed to other special functionaries, overcomes a deficiency in the prior art or is for any stated purpose.

Regarding claim 89, Mahajan discloses the data stored in at least one of the first or second sessions comprises data selected from the group consisting of digital music, digital audio, digital video, at least one digital still image, a sequence of digital images, digital books, digital text, a digital map, games, software, or nay combination thereof (col. 1 lines 19-31).

Regarding claim 97, Hanson differs from the claimed invention in not specifically teaches a method for re-directing data traffic in a write-once memory device wherein a pointer stored in the memory device is used to re-map the first address to the second address. However Mahajan teaches such (col. 5 line 30 through col. 6 line 65). Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify the write-once memory device in having a pointer stored in the memory device is used to re-map the first address to the second address, as per teaching by the WORM disc of Mahajan, because it increases the accessing speed of the memory by to quickly identify the start of the extent, the size of the extent, and the location of the next extent for the file.

Regarding claims 98-99, Hansen discloses a method of for re-directing data traffic in a write-once read many memory wherein the pointer is stored in a table, i.e., tracking store, and the pointer is stored in a field associated with a sector data (col. 6 lines 47-60 and figure 6).

Regarding claims 100-103, Hansen discloses the method comprising the steps d or e in claim 1 are performed by a controller, i.e., In-Place Modifier module (42, figure 3), hardware and software in a data storage device, i.e., CD-ROM, (col. 4 lines 43-65, col. 5 lines 51-64 and col. 6 lines 42-51).

Regarding claim 104, Mahajan discloses a method for re-directing data traffic in a write-once memory device wherein the file system structure comprises a file allocation table (col. 4 line 54 through col. Col. 5 line 8 and col. 5 line 30 through col. 6 line 43).

Regarding claims 105-106, Hanson discloses a method for re-directing data traffic in a write-once memory device wherein the file system structure comprises a root directory and a sub-directory (figure 4 and col.6 lines 42-67).

11. Claims 3-4 and 18-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hansen et al. (US PAT. 5,832,263 hereinafter Hansen) in view of Jeon (US PAT. 6,000,023).

Regarding claims 3-4, Hansen differs from the claimed invention in not specifically teaches the method for storing data in a write-once memory device comprises storing a pointer to a memory address storing a master and partition boot record. However, Jeon teaches the hard disk is divided into two partitions, and the first and second partitions both includes a boot sector for storing a loading program of an operating system and the data file series (col.2 line 54 through col. 3 line 9 and col. 4 line 55 through col. 5 line 1). Therefore, it would have been

obvious to a person of ordinary skill in the art at the time the invention was made to modify the a write-once memory device comprises storing a pointer to a memory address storing a master and partition boot record, as per teaching by the hard disk of Jeon, because it reduces the testing time of the computer system when the hard disk with an overlapped partition structure.

Regarding claims 18-19, the limitation of the claims are rejected as the same reasons set forth in claims 3-4.

12. Claims 55-56 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hansen et al. (US PAT. 5,832,263 hereinafter Hansen) in view of Mahajan (US PAT. 5,437,012) as applied to claim 54 above, and further in view of Jeon (US PAT. 6,000,023).

Regarding claims 55-56, the combination of Hansen and Mahajan differs from the claimed invention in not specifically teaches the method for reading data in the write-once memory device wherein the at least one of the second set of file system structures comprises an up-to-date master/partition boot record and wherein at least one of the first set of file system structures comprises an out-of-date master/partition boot record. However, Jeon teaches the hard disk is divided into two partitions, and the first and second partitions both includes a boot sector for storing a loading program of an operating system and the data file series (col.2 line 54 through col. 3 line 9 and col. 4 line 55 through col. 5 line 1). Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify the a write-once memory device of the combination of Hansen and Mahajan in having wherein the at least one of the second set of file system structures comprises an up-to-date master/partition boot record and wherein at least one of the first set of file system structures comprises an out-of-date

master/partition boot record, as per teaching by the hard disk of Jeon, because it reduces the testing time of the computer system when the hard disk with an overlapped partition structure.

Allowable Subject Matter

13. Claims 31-46 are allowed.

14. Claims 5-6, 8-9, 20-21 and 23-24 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

15. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Inokuchi et al. (US PAT. 6,138,203) discloses information processing apparatus and method enabling a write-once recording medium to be utilized as a re-writeable recording medium (abstract).

Chiang et al. (US PAT. 6,370,642) discloses programming the size of a broad-specific boot ROM (col. 1 line 43 through col. 2 line 58).

Kojima (JP 410, 283,717A) discloses to enable retrieval of data, which are written before file additionally written with the same name onto a writable CD-Rom medium (abstract).

Thompson (US PAT. 5,457,796) discloses file system with components shared between separately addressable versions (abstract).



Burke et al. (US PAT. 5,321,824) discloses accessing last recorded data in a continuation chain (col. 2 lines 12-31).


Ito et al. (US PAT. 6,631,107) discloses method and apparatus for information recording medium (abstract).

16. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Zhuo H Li whose telephone number is 703-305-3846. The examiner can normally be reached on Tue-Fri 9:00 a.m. to 6:30 p.m..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Matthew Kim can be reached on 703-305-3821. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

17. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Zhuo H. Li 

April 30, 2004


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